

## 2011 Regional Asphalt Meetings

### Frequently Asked Questions

#### Quiet Pavement Questions

1. Based on the data from the SR 234 site, the decibel difference between the dense graded and PFC was only 1 dBA. Is this difference significant?

*In general, the human ear can detect a 3 dBA change. From the original surface to the PFC, SMA and DGA, the change was significant. Between the three new mixes the difference is minor. However, we need to monitor the long-term changes as well as the other noise characteristics with these mixes.*

2. Can warm mix technology be used to produce the quiet pavement asphalt mixes?

*Yes, warm mix technology has been used for years in other states in the production of open graded friction course which is very similar to the PFC.*

3. When must the quiet pavement test sections be constructed?

*In order to meet the requirements outlined in HB2001, these sites must be constructed in Summer/Fall 2011 in order to achieve two winters of evaluation. The contracts will have a December 1, 2011 completion date. With the rubber modified asphalt in one section, the construction should be completed in the late summer.*

4. With the tight timeline to build the quiet pavement sections, what will be sacrificed and what will be the impact on the project costs?

*For now, the biggest concern is winter maintenance requirements. Open graded mixes tend to freeze quicker so proper cross slope is essential. With the use of polymer modified materials, mix durability and life are not concerns. As for cost, we expect to pay more for the initial installations. As more sites are built and knowledge gained, we anticipate seeing a lower cost – but not the same price as traditional dense graded mixes.*

#### Warm Mix Asphalt

1. Can warm mix technology be used to produce the quiet pavement asphalt mixes?

*See Question 2 under Quiet Pavements.*

2. Can warm mix asphalt technology be used with all asphalt mixes?

*Yes. In Virginia warm mix technology has been used with dense graded, SMA and thin AC overlays (SM-4.75).*

3. What is some guidance on asphalt materials produced with warm mix technology? Is there a difference between foaming and additive processes?

*For foaming processes, the typical production temperature at the plant is 50 F less than traditional hot mix. Typically, the mix temperature with the foaming process at the plant during the summer is between 260 F and 280 F. In the field, the mix will be approximately 50 F cooler in cold weather and around 250 F in the summer. Mixes cooler than this temperature are difficult in terms of hand work, but density can be achieved.*

*For additive processes, it depends on the composition of the additive. Some material can reduce the plant temperature by as much as 100 F. In the field the temperature could be as low as 200 F.*

*Discuss with the contractor what process is being used and what temperatures the supplier recommends.*

### **Pavement Marking and Traffic Engineering**

1. What is the status of the safety edge evaluation and implementation?

*VDOT is working with FHWA and industry representatives to implement the safety edge technology, which is a 30 degree formed shoulder edge. It is anticipated that the safety edge technology will improve the life of shoulder pavement by reducing raveling and should drop-offs as well as improve vehicle safety better control/ return to travel lane after departure. VDOT is currently developing specifications and standards for a pilot implementation and expects to include this technology in several projects in the upcoming paving season.*

2. Can pavement markings be mixed and matched in a roadway section?

*To maintain uniformity of day/night retroreflectivity levels and consistency of product life cycles, and maintenance replacement cycles, VDOT generally does not support using different types of longitudinal pavement marking materials in a roadway section. (i.e. paint with thermo, thermo with epoxy, etc.) However, VDOT is conducting testing of several materials and placement locations (centerline, skip, edge line) to assist in the development of a pavement marking policy that considers life-cycle cost effectiveness of different marking materials/pavement life, durability/visibility and any constructability issues. As a result of this study, VDOT may develop guidance that will allow mixing of suitable pavement marking materials under certain roadway conditions and pavement types.*

*It is anticipated that a draft policy will be developed by the end of this year for review. The current limited availability of paint materials is challenging to establishing new policy guidelines at this time.*

3. For straight overlays where B-VI tape is used, installation of the edge lines on the mainline pavement is very difficult. Do you have any construction guidance?

*VDOT has heard of this potential constructability issue and met with internal staff as well as industry representatives to review. It appears that this is not a statewide issue and that the*

*installation of B-IV on the edge lines should not be much more difficult than elsewhere. As discussed in Question 2 above, VDOT is reviewing any known constructability issues and addressing that as part of the new marking policy development. Should the edge line installation constructability be a valid issue, VDOT will be exploring options including grooved edge line installation of B-IV or potential use of alternative durable materials on the edge line for certain roadway systems and conditions and will include the final recommendations into the marking policy guidance.*

4. Has anyone examined the service life of B-VI tape when installed properly?

*See Question 2 above. As part of the policy study evaluation, the durability and sustained performance of various marking materials are being researched, including B-VI tape. Informal tracking of B-IV tape installations across the state reveals that B-IV tape, when properly installed, has generally performed to expectation with few incidents of early failure. Material failures are replaced through the 6-year warranty provided by the manufacturer.*

5. Can VDOT specify a specific material for pavement marking?

*See Question 2 above. As part of this policy development, VDOT will provide guidance on pavement marking material selections based on key criteria such as roadway types (limited access, multi-lane, rural secondary, etc.), pavement type, remaining pavement life, speed, ADT, etc. to obtain the most cost-effective and safe marking systems. Other factors that will be considered in this guidance will be life-cycle costs, safety benefits, maintenance practices, reducing work zones and congestion. The study is also reviewing new pavement marking materials not currently approved by VDOT.*

6. For the pavement marking report to the legislature, are the markings on secondary routes included?

*Yes, the biannual needs assessment report includes estimates of markings needs on the secondary routes.*

7. Paint placed on crack sealant does not stick. This is an issue along centerline longitudinal joints as well as along longitudinal joints where the pavement is widened. What can be done to improve the life of the line marking paint?

*Crack sealant does not provide a good surface for markings, therefore containing the sealant to the crack area and reducing the thickness is critical in ensuring effective marking installation. Crack sealant should be applied so that the crack is flush filled immediately following application and a thin overband of sealant extends approximately 1 inch beyond the edges of the crack. Excess crack sealant should be removed from the pavement surface immediately following application. Removal should involve the use of a squeegee, starting from the centerline and proceeding to the shoulder. In addition, nominal field adjustment of the marking line placement*

*generally may be permitted by the construction engineer to avoid sealant areas if the required lane width is not compromised.*

8. Why doesn't VDOT use more snow-plowable markers to improve visibility?

*VDOT has long recognized the use of snow-plowable raised pavement markers (SRPM) can be a very positive guidance for the motorist and studies indicate that SRPM out-performed all types of markings materials. SPRPMs are the current standard for projects where permanent RPM's are specified. However, the use of SPRPM comes with significant on-going maintenance issues that will require on-going funding and inspection commitment from VDOT. VDOT must consider several factors when choosing when and where to specify the SPRPM:*

*a) Initial cost; b) Inspections of the metal housing and surrounding pavement condition should occur with frequency (looking for cracking) which is labor intensive and creates a need for multiple lane closures and exposing workers and the public to a risk; and c) Inspection of and replacement of the lenses must occur with frequency in order for the markers to perform as intended. This is also labor intensive and creates multiple lane closures.*

*VDOT considers longitudinal markings, pavement messages, and pavement markers are all components of a pavement marking system. The development of the pavement marking policy will include guidance on installation of SRPM based on roadway geometrics (horizontal & vertical curves), roadway system, speed, adjacent roadway lighting, etc.*

**Density Testing**

1. During the process of cutting the VST cores, the contractor weighs the cores and determines the AC density. If the core density fails per the contractor results, then can the contractor invoke the referee process and cut the remaining three cores to determine final payment?

*Yes. This would be the preferred approach given the maintenance of traffic requirements.*

2. What are the density requirements for asphalt materials not placed at a standard thickness or outside the accepted thickness ranges? For example, with trench widening when base mix is placed at 6" or a SM-9.5A is placed at 2"?

*For mixes used in trench widening Type 2 and 3, the mix must meet 91.5%. For mixes less than the recommended thickness, there is no density requirement. For mixes thicker than the recommended thickness, VDOT should not specify those in a contract.*

3. If a mix has more than 25% RAP, does the mix have to meet the 92.2% or 92.5% density requirement?

*It depends on the contract requirements. Sections with "A" must meet 92.5% and with "D" must meet 92.2%. The percentage of RAP in the mix is the contractor's decision.*

4. What are VDOT plans for the use of non-nuclear gauges?

*VDOT and industry would like to move away from nuclear gauges as the acceptance device for density. Non-Nuclear gauges have been studied by the Research Council. Through their research, it has been determined that these gauges are not viable for quality control, acceptance and payment purposes. VDOT will continue to monitor these devices' development to determine possible use in the future.*

### **Milling**

1. Can any additional guidance be given on how to address scabbing without having asphalt material overruns?

*This is a project by project decision. In cases where overrun may occur, the project should consider adjusting the project length in order to remove the scabbing and not exceed the AC material quantity.*

### **Contract Issues and General Specifications**

1. Can contractor employee's not currently on the pre-qualification email list be added in order to get electronic addendums?

*Anyone can get the electronic addendums if they subscribe to the project on the CABB system.*

2. Can addendums be linked to applicable projects or only to those projects where a contractor has subscribed in CABB?

*A notice is posted on the CABB system when an addendum is performed that anyone can see.*

3. If new bridges and structures are placed above the minimum federal vertical clearance, why is there a requirement to not increase the existing surface elevation?

*VDOT needs to maintain accurate records for oversize load permitting.*

4. What will be paid for as materials on hand?

*Refer to section 109.09 for the list of materials that qualify for payment.*

5. How will VDOT pay for lump sum maintenance of traffic?

*It's recommended that the LS MOT be paid by percentage of total tonnage of asphalt material placed within the billing period.*

### **Miscellaneous**

1. If a road needs patching prior to overlay, do contractors have any issues with performing this patching?

*Contractors do not have a problem with performing patching per the Surface Restoration SP. However, this patching should be done as part of the paving operations and not as a separate mobilization.*

2. Should diesel fuel be used with asphalt?

*At the plant diesel fuel should not be used. In the field, there is no where in the specifications that bans the use of diesel. If diesel is used for cleaning equipment/tools or spraying the paving equipment, then the inspector should make sure the AC material has not been damaged. Damaged could be in terms of segregation or flushing. These are area that can be rejected per Sections 211 and 315 in the specifications.*

3. What is the proper process for determining when a road density should be waived?

*The road should be assessed by the inspector and contractor. Materials should be notified of the concerns raised. A roller pattern and control strip should be constructed to determine if density can be achieved. This control strip should not be on the best or worst section of pavement, but representative of the project. Once the control strip density is measured, then a final recommendation can be made on waiving density.*

4. On some secondary roads, the pavements need patching and some cases scratching to correct geometric problems. Can scratching be done if not specified in the contract?

*Yes, this is an option and should be discussed with the project inspection staff.*

5. Patents are being pursued for trackless tack, how will this be handled by VDOT.

*VDOT is aware of the patent process for trackless tack. VDOT will have to await the outcome of this process before assessing the impact and making adjustments.*

6. Are there problems with mixing conventional and trackless tack cost materials?

*It depends on the product and how it needs to be handled. The amount of work required to clean out a tack truck and tack tank varies. The cleaning and compatibility is a function of the charge of the tack – positive or negative. Trackless tack coat manufacturers should be able to provide the proper cleaning and handling recommendations.*

7. Which pavement transition specification will be used in the 2011 plant mix schedules?

*The pavement transition specifications in the 2010 schedules will be followed. VDOT and industry will work together to finalize the transition requirements for next paving season. At the moment a few standalone contracts are using the ACOT-1 standard. Unless it has been removed from the contract, then that standard should be followed.*